

TESTIMONY OF
DR. ROBERT H. HOBBS
DIRECTOR OF OPERATIONS, UNITED TECHNOLOGIES RESEARCH CENTER
UNITED TECHNOLOGIES CORPORATION

HOUSE COMMITTEE ON SCIENCE
“BUSINESS ACTIONS REDUCING GREENHOUSE GAS EMISSIONS”
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Good morning, Mr. Chairman and Members of the Committee. I am Bob Hobbs, Director of Operations at the United Technologies Research Center, the research and development arm of United Technologies Corporation (UTC). United Technologies, based in Hartford, Connecticut, is a diversified company that provides high technology products and services to the aerospace and commercial building industries worldwide. UTC’s products include Otis elevators, escalators and people movers; Carrier heating and air conditioning systems; UTC Fire & Security fire safety and security products and services; UTC Power fuel cells; Pratt & Whitney aircraft engines; Hamilton Sundstrand aerospace systems; and Sikorsky helicopters.

UTC & Corporate Responsibility

UTC is a \$38 billion company, the 39th largest in the United States. Our total shareholder return since 1992 is close to 1000 percent and is more than three times that of either the S&P 500 index or the Dow 30 Industrials. UTC is proud of its record of solid corporate citizenship. We’ve been included in the Dow Jones Sustainability World Indexes since it began in 1999 and have been rated AAA by Innovest Strategic Value

Advisors. We were also named one of the world's 100 most sustainable companies at this year's World Economic Forum in Davos by Corporate Knights and were the only aerospace company included. UTC's success is rooted in clarity of organization and total alignment among management about what we want to accomplish. For UTC, that is shareholder value within the confines of very good corporate citizenship. We don't choose between one or the other, we pursue both with discipline and focus.

Shareholder value comes in part from research and development. UTC spends approximately \$2.8 billion annually, 90 percent of that in the United States, to develop tomorrow's technologies. United Technologies Research Center (UTRC) works with each UTC business to make certain their products and services are the most innovative and technologically advanced in the world. UTRC is an incubator for UTC products, researching energy and environmental innovations to assist UTC in developing, and then building, new products for the next generation. Whether its research on innovative hydrogen production and storage technologies, inventing ways to heat and cool more efficiently or improving jet engine design and efficiency, UTRC provides valuable technical experience to further UTC's pursuit of better environmental quality in its products.

UTC Voluntary Commitment

UTC is constantly working to reduce the environmental footprint of our worldwide facilities and operations. We are accomplishing this objective directly by reducing greenhouse gas emissions produced by UTC operations and indirectly by developing and manufacturing products that use less energy and emit smaller amounts of greenhouse gases. We are driving pollutants in the manufacturing process down to their

lowest achievable levels and reducing our energy consumption so less pollution is produced in the satisfaction of our energy needs. UTC quantifies environmental goals, measures progress and reports that progress to our Board of Directors, employees and community.

In 1997, UTC resolved to reduce its global energy consumption by 25 percent (normalized for revenues) from 1997 levels by 2007. Once we exceeded that target, we increased the goal to a 40 percent reduction in our energy use worldwide, and we are already meeting that ambitious goal. Even as we revised the goal upward, we kept the timetable firm and still achieved the enhanced goal two years ahead of schedule. Since joining the Environmental Protection Agency (EPA) Climate Leaders in 2001, we have reduced our greenhouse gas emissions by 74,000 metric tons as a result of our energy efficiency goals. In roughly the same time period, our revenues increased by \$9.5 billion, demonstrating that environmental quality and economic growth can indeed go hand-in-hand. UTC's environmental performance and achievements recently earned us one of the EPA's 2005 Climate Protection Awards.

Key Drivers in Reducing Greenhouse Gases

Why is UTC taking a leadership role to address climate change? The short answer is that our own corporate policy demands it. UTC's environmental, health and safety policy requires that we "conserve natural resources in the design, manufacture, use and disposal of products and delivery of service." We take this directive extremely seriously and have established internal environmental standards that both comply with the law and go beyond it when necessary to achieve the goals of this policy. We don't

choose between responsibility and profitability; our corporate responsibility places environmental performance right alongside financial results.

We would not be where we are today if not for strong commitment of our Chairman, George David, senior managers and front-line employees in each of our business units. In a speech given in 1998 at the Earth Technologies Forum, Mr. David explained his personal motivation in committing the corporation to address the climate change issue by stating: “ I have children and prospectively grandchildren and great grandchildren whose lives and livelihoods concern me.” Mr. David again stressed UTC’s commitment to sustainability in a 2003 speech to the Society for Organizational Learning in East Hartford, Connecticut. He defined UTC’s approach to sustainability within the context of five general themes: energy efficiency of our products and service; environment, health and safety impacts in our own operations; productivity in its conventional sense (doing more with less); opportunities for employees to develop themselves; and legal compliance and high ethical standards.

Through close coordination among the operating businesses and corporate headquarters, UTC has brought together a tight network of experts to gather and analyze energy consumption data; provide technical assistance; develop benchmarks; and share best practices across the corporation. We have developed internal guidelines for use across the units in common energy applications such as lighting and compressed air. In addition to our energy efficiency goals, we are also on track to achieve a 60 percent reduction in air pollutants and non-recycled waste and a 40 percent reduction in water consumption by 2007 (all normalized for revenue). We’ve been able to achieve such dramatic progress due in part to our “Achieving Competitive Excellence” (ACE)

program. ACE is the internal UTC discipline intended to simplify procedures, raise efficiency and ensure world-class quality in products and processes while supporting our environmental commitments. “Continuous improvement” in our operations is the key element of ACE.

Climate change is a growing dynamic in the global marketplace. We believe that setting goals for reduced energy consumption, which translates into lower greenhouse gas emissions, has already improved our bottom line performance by reducing production costs and allowing us to be more competitive. Lower energy costs and improvements in manufacturing processes are leaving us with more resources to devote to developing new and innovative products that address climate change and other environmental and energy problems. We are also keeping ahead of the curve on potential future climate change regulations by investing in greenhouse gas reductions now. We hope and trust that policymakers will recognize these early commitments to the climate change solution.

Energy Efficiency, Greenhouse Gases and UTC Products

Genuine corporate responsibility requires that we make environmental considerations priorities in new product development and investment decisions. Environmental leadership doesn’t merely enhance our corporate reputation; it offers our customers world-class quality in products while increasing efficiency and reducing waste – making them better stewards of the environment as well. UTC continuously explores ways to increase efficiency and reduce greenhouse gas emissions through the products it develops.

By creating products that use less energy and help lower greenhouse gases that contribute to climate change, we can differentiate our products in an increasingly

environmentally conscious global marketplace. Because the energy savings from the use of our products present our greatest contribution to the reduction of greenhouse gases, I'd like to give you a snapshot of UTC's expansive and diverse portfolio of energy-efficient and environmentally friendly products.

UTC Power/Fuel Cells

Our UTC Power division is a full-service provider of clean power solutions and is the leading developer and producer of fuel cells for on-site power, transportation and space applications. UTC Fuel Cells (UTCFC) is a business unit of UTC Power and manufactures the PureCell™ 200 power system, which provides 200 kilowatts of electricity and up to 925,000 btu/hr of heat for combined heat and power applications. Each PureCell™ 200 avoids the production of 1,100 tons of carbon dioxide emissions annually, which is why UTC Power earned one of the EPA's Climate Protection Awards in 2000. Last month, the PureCell™ 200 fuel cell fleet achieved a major milestone, providing one billion kilowatt hours of energy production, or enough to power 91,000 homes for a year. We've already deployed a total of 275 units world wide, including 26 in New York to date, avoiding 102 million pounds of carbon dioxide emissions in the Chairman's home state alone.

In addition to its demonstrated environmental and energy efficiency accomplishments, the PureCell™ 200 is earning a reputation for reliability as well. A UTC Power fuel cell kept the Central Park police station operating during New York City's famous power outage in 2003, and just last month, Russia's leading oil and gas pipeline engineering company, Orgenergogaz, was able to keep operating during a blackout in southern Moscow because of the PureCell™ 200. We're keeping lights on

from New York to Moscow and will expand our reach in 2007 when UTC Power introduces an enhanced version of the PureCell™ 200 with twice the life span of its existing product.

UTC Power has also developed the industry's first integrated microturbine and double-effect absorption chiller system, the PureComfort™ 240M. The system converts more than 80 percent of its fuel input to efficient electric, cooling and heating output. We expect it to reduce carbon dioxide emissions by 40 percent and nitrogen oxide emissions by 90 percent over those of the average central fossil fuel generation plant. This is equal to the benefits of planting 150 acres of trees and taking 250 cars off the road, respectively, during the same time period. In May, the A&P grocery chain, which operates 650 stores in 10 states, installed a PureComfort™ 240M system in its Mount Kisco, NY store, citing the technology as one of the company's commitments to "make more efficient use of energy and to protect the environment by minimizing emissions."

Waste heat represents an untapped energy resource. According to the U.S. Department of Energy's May 2003 Thermally Activated Technologies Roadmap, total energy loss in the form of waste heat in the United States is equal to the amount of energy annually consumed by the U.S. transportation sector or by the entire Japanese economy. UTC Power, in partnership with Carrier Corporation, another UTC business unit, developed the PureCycle™ 200 power system to turn waste heat into electricity, providing a zero-emission alternative to traditional power sources. In addition to the environmental benefits, the PureCycle™ 200 offers high reliability, low maintenance and cost savings through the reduced fuel use.

In addition to its portfolio of climate-friendly onsite power solutions, UTCFC is also developing zero emission, energy efficient fuel cells for transportation applications with environmental and energy security benefits. We've deployed zero emission fuel cell buses in Washington, DC, California, Madrid and Turin. Last year, AC Transit logged over 8,000 miles operating a Thor 30' hydrogen fuel cell, hybrid-electric bus developed by ISE Corporation and UTC Fuel Cells. This bus was deployed in the Oakland, California area and achieved double the fuel economy of a 30-foot diesel bus. This year, we are delivering power plants for four fuel cell buses that will be operated in California by AC Transit and SunLine Transit.

UTCFC is currently working with major automobile manufacturers, including Nissan, Hyundai-KIA and BMW, and the U.S. Department of Energy (DOE) on development and demonstration programs for automobiles. We are teamed with Chevron and Hyundai-KIA as part of DOE's Hydrogen Learning Demonstration Program and will be deploying a fleet of 32 zero-emission Hyundai-KIA Tucson sport utility vehicles and Sportage cars as part of the initiative.

Carrier

Carrier Corporation is the world's leading manufacturer of heating, ventilating, refrigerating, and air conditioning systems and products. Carrier is at the forefront of its industry, developing systems with ever-more environmentally sound refrigerants and dramatically reducing the power requirements of their products. From the smallest window air conditioning units to the largest centrifugal chillers, Carrier heating and cooling equipment is distinguished by some of the highest energy efficiency ratings in the industry. Carrier participates in the EPA's Energy Star program to provide energy

efficient products to residents and businesses. Carrier supports the goals of the Montreal Protocol to phase out use of certain substances that deplete the ozone layer, and in 1994, pioneered the worldwide phase-out of CFCs. Carrier is also helping lead a revolution in the way the air conditioning industry handles chlorine-containing refrigerants and is the only air conditioning manufacturer that provides chlorine-free refrigerants across its entire product line.

Not a company to rest on its laurels, Carrier is a leading advocate for a national energy policy with a strong commitment to conservation and efficiency improvement, including a consensus energy efficiency standard agreement for commercial packaged air conditioning products, refrigerants and freezers. Carrier was instrumental in moving the industry to a 13 SEER [Seasonal Energy Efficiency Ratio] standard, meaning that Carrier residential air conditioning systems shipped in the United States after January 2006 will be on average 30 percent more efficient than today's standard.

Pratt & Whitney

Pratt & Whitney is a world leader in the design, manufacture and support of aircraft engines, gas turbines and space propulsion systems. Through the development of better heat resistant coatings, more environmentally friendly processes, innovative servicing procedures, more efficient turbine blades and quieter, more fuel efficient engines, Pratt & Whitney has pioneered most major advances in both military and commercial aviation. And, the company's new Specialty Materials & Services business is redefining entire industries by applying environmental technologies in unique ways. For example, ElectroCoreTM is a new, advanced power plant emissions control system under development that will control a variety of pollutants from coal-, wood- and other

solid fuel-fired boilers, ushering in a new way to control multiple pollutants in power plants and manufacturing facilities.

Otis

Another UTC division, Otis, the world largest manufacturer of elevators, escalators and moving walkways, reexamined every aspect of the elevator – from design and installation to operation and maintenance – and created the Gen2 system that is up to 50 percent more efficient than conventional elevators. Innovative new regenerative technologies will reduce the net power requirements of new Otis elevators installed worldwide even further.

Forming Partnerships

UTC regularly forms partnerships with others to encourage greenhouse gas reductions and meet energy efficiency goals. As an EPA Climate Leaders partner, UTC pledged to reduce global greenhouse gas emissions by 16 percent per dollar of revenue from 2001 to 2007. As an EPA Energy Star member, we are helping Americans to save energy and avoid greenhouse gas emissions by providing energy efficiency products in residential and commercial settings. UTC is a founding member of the Pew Center's Business Environmental Leadership Council, a group of companies committed to responding to climate change challenges, and the U.S. Green Building Council, a coalition of companies promoting the use of green building practices.

Earlier this year, Global Green USA awarded UTC the "Corporate Design Award" for our Sustainable Cities environmental grant and volunteer effort to advance environmentally responsible building systems in urban areas. UTC Power joined with the EPA as part of CHP Partners, a public-private partnership committed to providing

clean, efficient power and thermal energy and reducing pollutants and greenhouse gases. On the state level, UTC is active with the Regional Greenhouse Gas Initiative, a multi-state effort to reduce carbon dioxide emissions, and Governor Rell's Connecticut Climate Change initiative.

UTC also frequently partners with suppliers to help them reach our standards. For example, Hamilton Sundstrand provides training for its suppliers to help them attain UTC environmental levels. And, Pratt & Whitney is a corporate sponsor of EPA's Strategic Goals Program under which large companies share with suppliers their best practices in environmental management systems, pollution prevention and waste minimization.

Conclusion

Good corporate climate policies have proven to be complementary to good business policies, allowing UTC to understand, manage, track and minimize our greenhouse gas emissions and energy use while simultaneously adding business value. Thank you, Mr. Chairman, for giving us the opportunity today to share with you and the Members of the Committee some of the specifics of our commitment to reducing greenhouse gases throughout our operations and across all our product lines. If you'd like further information regarding our environmental success story, we have copies of the UTC 2004 Corporate Responsibility Report available here and on our website at www.utc.com.